AMENDMENTS TO THE SPECIFICATION

Please amend the claims as set forth hereinbelow.

Please replace the current title with the following new title:

[new title] Method for forming a holographic spectral filter

Please insert the following new paragraphs after paragraph **[0033]**:

[0033-1] Figs. 14A and 14B illustrate methods for forming a holographic spectral filter according to aspects of the invention.

[0033-2] Fig. 15 illustrates a method for forming a holographic spectral filter according to one aspect of the invention.

[0033-3] Fig. 16 illustrates a method for forming a holographic spectral filter according to one aspect of the invention.

[0033-4] Fig. 17 illustrates a method for forming a holographic spectral filter according to one aspect of the invention.

[0033-5] Fig. 18 illustrates a method for forming a holographic spectral filter according to one aspect of the invention.

Please replace paragraph **[0046]** with the following replacement paragraph:

[0046] The diffractive elements may comprise profile variations in the planar boundary of a planar waveguide (Figs. 14A and 14B). In one embodiment, one (Fig. 14A, with substrate 1401 shown on support slab 1402) or both (Fig. 14B) faces of the holographic substrate 1401, (preferably only one), is etched by photolithographic, e-beam, or other standard surface etching means known in the art, to produce, e.g., a surface depth profile (depth here is defined as the deviation of the local substrate surface from the average surface level), or, e.g., a refractive index profile comprising variations from the original substrate refractive index value, whose spatial structure comprises the diffractive elements of the programmed holographic structure.

Please replace paragraph **[0047]** with the following replacement paragraph:

[0047] In another embodiment (Figs. 14A and 14B), one or both ~~slab~~ faces of substrate 1401 may be deformed by the application of a stamp or other mechanism, whose surface relief has the spatial structure of the desired programmed holographic structure. In yet another embodiment (Fig. 15), a thin deformable dielectric layer 1503, with

thickness on the order of one micron, may be deposited on one or both faces of the substrate 1501 (shown on support slab 1502), followed by deformation of the thin dielectric layer(s) 1503 by, e.g., a stamp or other mechanism whose surface relief has the spatial structure of the desired programmed holographic structure. It is to be noted that the similarity in refractive index between the thin dielectric layer 1503 and the substrate 1501 is important. For a fixed surface relief geometry derived from deformation of an overlayer, the coupling between input and output signals tends to be enhanced when the difference in refractive index of the overlayer and holographic substrate is minimized. More generally, control of the difference in refractive index between overlayer and holographic substrate provides for control over the input-output signal coupling strength.

Please replace paragraph **[0048]** with the following replacement paragraph:

[0048] In yet another embodiment, a metallic or dielectric layer 1603 whose surface relief has the spatial structure of the desired programmed holographic structure may be deposited on one or both ~~of the grating slab~~ faces of substrate 1601 (shown on support slab 1602 in Fig. 16). In yet another embodiment, one or both support slabs 1702 whose surface relief has the spatial structure of the desired programmed holographic structure, may be pressed securely against the substrate 1701, and preferably bonded (Fig. 17). In yet another embodiment, a planar substrate 1801 (shown in Fig. 18 on support slab 1802) exhibiting photosensitivity leading to index or absorptive changes, may be exposed to writing optical fields propagating within the substrate and having the characteristics of the design optical fields described below (i.e., internal photoexposure). In yet another embodiment, a planar substrate 1801 exhibiting photosensitivity leading to index or absorptive changes, may be exposed, via contact or projection imaging (i.e., external photoexposure), to an optical writing field whose spatial intensity pattern within the substrate conveys the spatial structure of the desired programmed holographic ~~structure.~~ structure, often within a planar waveguide (Fig. 18) or other optical medium. Any other suitable fabrication method may be used to form a volume hologram within the volume of a planar waveguide (Fig. 18).